

TRAINING CURRICULUM and LESSON PLANS

IV / IO Maintenance Endorsement

**Curriculum Objectives and Sample Lesson Plans
for the EMT-Basic IV / IO Maintenance Endorsement**

Montana Department of Labor and Industry Board of Medical Examiners

The purpose of the IV / IO Maintenance Endorsement for EMT-B is to provide the EMT-B with the knowledge and skills to manage peripheral IVs and intraosseous devices and maintain clear intravenous fluids (DW5, DW10, LR and NS).

Patient care should always be based on patient presentation and Montana Prehospital Treatment Protocols.

ENDORSEMENT: IV/ IO Maintenance

General description:

Allows EMT-Basic to maintain peripheral veins and intraosseous devices, and maintain clear intravenous fluids (D5W, D10W, LR and NS).

COGNITIVE OBJECTIVES

At the completion of this unit, the EMT-B with IV/IO Maintenance endorsement student will be able to:

- 1-4.13 Describe the indications, equipment needed, techniques utilized, precautions, and general principles of peripheral venous cannulation. (C-1)
- 1-4.14 Describe the indications, equipment needed, techniques utilized, precautions, and general principles of intraosseous needle placement and infusion in children and adults. (C-1)
- 1-4.23 Describe disposal of contaminated items and sharps. (C-1)
- 4-2.9 Differentiate between the administration rate and amount of IV fluid in a patient with controlled versus uncontrolled hemorrhage. (C-3)
- 4-2.32 Differentiate between the administration of fluid in the normotensive, hypotensive, and profoundly hypotensive patient. (C-3)

PSYCHOMOTOR OBJECTIVES

At the completion of this unit, the EMT-B with IV/IO Initiation endorsement student will be able to:

- 1-4.32 Use universal precautions and body substance isolation (BSI) procedures
- 1-4.33 Demonstrate discontinuation of a peripheral IV infusion. (P-2)
- 1-4.34 Demonstrate discontinuation of an intraosseous infusion. (P-2)
- 1-4.41 Demonstrate disposal of contaminated items and sharps. (P-3)
- 1-4.42 Demonstrate changing medication solutions (D5w, D10W, LR and NS)

LESSON PLAN:

RECOMMENDED TIME TO COMPLETE:

4 hours, which combines, part lecture overview and skills practice, but does not include clinical requirements.

EQUIPMENT:

IV and IO equipment to include but not be limited to:

BSI Equipment (gloves, gown, mask, etc)
IV Infusion Arm

IO Manikin
IV Solutions
Administration Sets
IV Extension Tubing and/or Three-way Stopcocks
IV Catheters
IO Equipment
 Catheters (child)
 FAST Unit (adult)
 Big Gun (adult)
 EZ-IO (adult)
Tape (or other securing device)
Gauze Pads (2x2, etc)
Alcohol Preps or similar substitute
Sharps Container

DECLARATIVE:

- 1) Introduction
- 2) Medical asepsis
 - a) Clean technique versus sterile technique
 - b) Sterilization
 - c) Antiseptics
 - d) Disinfectants
- 3) Universal precautions and body substance isolation (BSI) in medication administration
- 4) Venous access
 - a) Peripheral intravenous cannulation
 - i) General principles
 - ii) Indications
 - iii) Precautions
 - iv) Equipment
 - v) Technique
 - (1) Extremity
 - (a) Indications
 - (b) Precautions
 - (c) Equipment
 - (d) Procedure
 - b) Discontinuation of a peripheral IV infusion

- 5) Intraosseous needle placement and infusion
 - a) General principles
 - b) Indications
 - c) Precautions
 - d) Equipment
 - e) Technique
 - i) Adult
 - (a) FAST
 - (b) BIG BONE GUN
 - (c) EZ-IO
 - ii) Child
 - (a) Extension tubing
 - (b) Three way stop cock
 - (c) Direct
 - f) discontinuation of an intraosseous infusion
- 6) Fluid Replacement Therapy
 - i) Intravenous fluids
 - (a) Crystalloids
 - 1. Isotonic solutions
 - 2. Hypertonic solutions
 - 3. Hypotonic solutions
- 7) Disposal of contaminated items and sharps
- 8) Follow local protocol for disposal of contaminated items and sharps